CENTRAL INTELLIGENCE AGENCY 25X1 REPORT

INFORMATION REPORT

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SUBJECT Department No. 700 of the Kirov Tractor Plant in Chelyabinsk

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25X1 PLACE ACQUIRED

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25X1 SUPPLEMENT TO REPORT NO.

25X1 THIS IS UNEVALUATED INFORMATION

1. A detailed description was obtained of the layout and the installations of Department No 700 of the Kirov Tractor Plant in Chelyabinsk (55°10'N/61°25'E). (1) The production of the Kirov Plant comprised tanks, Kirov-type caterpillar tractors, tractor engines, stationary engines, and spare parts for tractors, engines and tanks. The tank production figure was not estimated but source observed that late in 1949 three to five tanks per day left the tank assembly shop for the proving ground. (2)

2. Late in 1949 the daily production of Kirov S -80 tractors, also called Stalinets by Soviet workmen, was 75 units. Thirty units were manufactured in the first shift, 25 in the second shift, and 20 in the third shift. The production figures were known to all workmen [redacted] 25X1 (3) The tractors were equipped with a four-cylinder Diesel engine of 80 HP and with a small gasoline auxiliary engine for starting. The standard tractor design had a cruising speed of 12 to 15 km per hour. A small number of tractors were built with appropriate facilities for the installation of grading and snowplowing appliances. The cruising speed of these special types was 9 km per hour. The daily production of stationary engines was not recorded. 25X1 [redacted] the engines in operation mounted on power shovels and on agricultural machinery used on kolkhoz farms. [redacted] 25X1 the engines were also used for the operation of small power stations.

25X1 3. [redacted] 25X1 spare parts were continuously dispatched. It was observed that crankshafts and other single parts were manufactured in the annealing shop. Six to ten of these crankshafts were produced per shift late in 1949. In 1948 10 to 12 tank driving shafts were produced in the same shop during two out of three shifts. However, late in 1949 only six shafts were manufactured in the two-shift schedule according to the norm. The single parts installations were not fully utilized. In the machine shop only two out of twelve shaft-polishing machines were in operation.

25X1 [redacted]

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25X1

(1)

(2) The indicated daily production of three to five tanks seems to be extraordinarily slight considering the capacity of the plant. However, this figure has been confirmed by other, apparently reliable, 25X1 the tank referred to is the JS-3 model.

25X1 (3) daily production of 75 tractors. 25X1 This high tractor production figure is credible since tank production, which according to German wartime records reached 35 to 40 units daily, seems to have been drastically reduced in the meantime.

25X1 (4)

(5) The designation "Department No 700" for the entire building is doubtful, as a small subdepartment in this building also had the same numerical designation. However, the production program of this department has clearly been identified. It comprised the production and final assembly of engine parts, as well as the production and final assembly of tractor parts. 25X1

25X1

25X1 . The variety of installations and production is presumably responsible for the fact that 25X1 only gained a vague impression of the entire production program though he supplied a detailed description of individual installations.

25X1

25X1

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[redacted]

Legend:

1. Transportation section. It extends along the entire southern front of the factory building of Department No 700. The width of this section is from 7 to 10 meters. Spur tracks leave at both ends. The spur track at the eastern side has facilities for simultaneous loading of four railroad cars.

1a. Administrative section.
1b. Storage section.
1c. Small latheshop.
1d. Grinding shop.

2. Workshop. Its equipment includes a mill for chip crushing.

3. A crane track with several trolleys, traversing the entire building. The carrying capacity of each trolley is estimated at 15 to 20 tons.

3a. Trolleys.

4 - 11. First Section of the Chassis Department.

4. Five or six old-type drilling machines used for drilling protective cover halves for tractor gears. About twenty holes were drilled and thread cut into each cover. The completed work pieces were painted red on the inside and blue on the outside and then passed to the tractor assembly shop. The average production per shift was 25 gear cover parts. Work was done in three shifts.

5. Roller conveyor used to transport covers through the different processing stages.

6. Five or six milling machines used for milling gear covers. The average production per shift was 25 pieces. Work was done in three shifts.

7. Small repair shop for the first section of the Chassis Department.

8. Bookkeeping and administrative offices of the Chassis Department.

9. Eight milling machines and vertical turning and boring machines, two automatic lathes, and four drilling machines used for turning and milling the other half of the gear covers, the counterparts to those produced in Sections No 4 and No 6. The average production per shift was 25 pieces. Work was done in three shifts.

10. Roller conveyor used to transport work pieces.

11. Vertical turning and boring machines and drilling machines used for tooling the gear covers described in Section No 9.

12. Small open yard, not used.

13 - 14. Second Section of the Chassis Department.

13. Tool grinding shop, equipped with 10 to 15 grinding machines. This section is subdivided into individually partitioned cabins. [redacted] 25X1 25X1

14. Section equipped with a drilling machine and an electric welding instrument.

15. Welding shop, 15 x 25 to 30 square meters. This is a part of the fourth section of the chassis department. Its equipment comprises five electric welding instruments, chucking devices used for welding gear boxes, and a crane track with about seven cranes.

16. Engine-frame welding shop in the third section of the chassis department with five electric welding instruments, five devices for holding the side members and clamping the crossarms before welding, one straightening machine and one press for straightening. The parts processed in this section came from the preparation section.

17. Two rows of eight welding cabins in each row. They belonged to Section No 16.

18. Machine shop in the third section of the chassis department, equipped with 20 to 25 drilling machines, 2 lathes, grinding and milling machines, and one boiler for water used in drilling. Small parts shaped like a plate and bolt were tooled in this shop.

19. Annealing shop with six electric annealing furnaces. Large wheels for driving the rear axle were annealed and hardened in a water bath. There were also wheels in which only the rim was hardened.

20. Water basin for hardening.

21. Test stand equipped with control motor and microscope, used for controlling the hardness of the completed product.

22. - 29. Sub-Department No 700.

22. Cleaning shop with two sand blast apparatuses.

22 a. Sand dump.

23. Spring section, equipped with apparatus for testing the tensile and compressive stress. Spiral springs, from valve springs down to the smallest instrument springs, were manufactured from steel wire which was supplied in coils. The wire was processed by hand until late in 1949; afterwards machines were used. The waste percentage was about 20 percent late in 1949.

a. Two annealing furnaces.
b. One water bath and one oil bath.

24. Annealing shop for the hardening of springs, rods, screws etc.

a. Small office.
b. Test stand.
c. Three or four electrically heated, round annealing furnaces.

25. Galvanizing section, equipped with about ten acid baths for tin-plating or galvanizing of rocker-arms, rods, and tractor pistons. The tractor pistons could easily be identified as they were larger than those manufactured for tank engines.

26. Bookkeeping and executive offices.

27. Fitting shop for repairs.

28. Storage room for tooled tractor shafts.

a. Empty area.

29. Annealing shop for processing tractor and tank shafts as well as small parts. Tractor shafts and tank shafts came in transportation carts from the forge to the annealing shop where they were hooked to conveying machinery and were electrically driven into the annealing furnaces. The volumetric capacity of one furnace was six to ten shafts. The duration of the annealing process was not known. The average production per shift was 30 tractor shafts. Work was done in three shifts. The tank shafts were about 1.25 meters long and about 100-mm thick. About mid-1949 [illegible] tank crankshafts produced in each of the

two shifts. However, the tooling of the tank shafts was done at intervals. In December 1949 the shift output was only three pieces.

25X1 [redacted] the tank crankshafts were polished in Department No 100. Small parts tooled for the chassis department and Department NK-10 included gear wheels and screws. The parts came on little electric trucks and passed through the annealing furnaces on a conveyor belt. Immediately after annealing they were moved on the same conveyor belt to the oil bath.

a. One electric annealing furnace used for processing tractor and tank shafts.
b. Two electric annealing furnaces used for processing shafts for the chassis department and Department NK-10.
c. Three annealing furnaces, similar to those in the spring section No 23.
d. Three tempering water or oil baths.

30 - 37. Sub-Department No 100.

30. Tool room and grinding shop.

31. a. Latheshop.
b. Small office for transportation work.

32. Sub-department No 100 was subdivided into four machine shops for tooling tank and tractor engine shafts. The shafts came from the forge, underwent preliminary turning and grinding in Sub-Department No 100, then were hardened in Annealing Shop No 29 and were returned to Subdepartment No 100 for final grinding and polishing. Tank shafts were tooled and polished in Section No 32 a, tractor shafts in Section No 32d. They were hollow-drilled at both ends and were provided with a 32-mm thread by manual operation. The shafts were tested in Section No 32 c with regard to their centrifugal force. The tractor shafts were provided with balancing pieces (Ausgleichsstuecke). Completed shafts were polished and then preserved for storage in a boiling oil bath.

a. Machine shop equipped with twelve shaft polishing machines with an average of only two in operation, several milling machines (source can only remember three units), six grinding machines (only three were in operation), one boiling-oil preservation device for shafts, and two oil baths. The installations served for processing tank shafts and tractor shafts. The section also had a latheshop and a repair shop as well as a small office for the executive personnel.

25X1 b. Machine shop. [redacted]

25X1 [redacted] Unfinished connecting rods for tanks were processed here. They were milled, drilled, ground, polished, and their weight was adjusted. Connecting rods of tractors were rougher and simpler than those of tanks.

c. Machine shop equipped with a total of about fifty grinding machines, milling machines, drilling machines, polishing machines, and lathes. Forty of these machines were in operation. Tractor shafts were tooled in this shop.

d. Machine shop equipped with a total of about twenty milling machines, drilling machines, and grinding machines used in manufacturing connecting rods for tractors. Source cannot exactly remember this section.

33. Special section, equipped with one press, grinding machines, and milling machines. A total of six or seven machines was set up. Tractor crankshafts for antiquated models were manufactured here.

34. Machine shop for tooling connecting rods and balancing weights for crankshafts. Two connecting rods each were simultaneously drilled lengthwise by two horizontal drilling machines. The drilled holes were lubrication conduits. The drill bits of fully automatic machines frequently broke off. The surface of the connecting rods was smoothly ground. The shift norm for the manufacture of balancing weights for tractor shafts was 100 pieces. Work was done in three shifts.

a. Two horizontal drilling machines.
b. Two milling benches.
c. One milling machine.
d. Four milling machines.
e. One vertical turning and grinding mill. (Karusselschleifmaschine)
f. Two large drilling machines.
g. One small milling machine.
h. Two drilling machines.

35. Administrative offices, mess hall, bread depot, kitchen for sub-departments No 100, 700, etc. These installations occupy half of the northern part of the entire building.

36. Latheshop equipped with three lathes used for tooling brass bushings for connecting rods.

37. Milling shop equipped with four or five milling machines, two grinding machines and several drilling machines used for tooling balancing weights for crankshafts.

38. Workshop. Its equipment included drying kilns. The production of grinders was observed in this shop.

39 and 40. Distribution station for soda, cleaning rags, drilling water and oil.

41. Sub-Department No 200. [redacted] It was full of machines [redacted] Aluminum-cast engine casings for tanks were drilled and milled here. Also bluish-white metal disks as large as the palm of the hand were ground and brightly polished. PWs worked in this sub-department only during 1946 and 1947.

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a. Empty space in the northwestern corner of the building.

42. Sub-Department. The numerical designation was unknown to source. This section was equipped with about 100 machines [redacted] Aluminum-cast cylinder heads for tank and tractor engines were turned and were given finishing treatment. The production ratio of the two products was unknown to source. Work was done only in two shifts.

25X1

43. Cleaning shop and annealing shop belonging to Sub-department No 700. Its equipment comprised sand blast apparatus, one compressor unit and one annealing furnace used for processing small parts which came into the spare parts depot.

44. Section No 5 a. of the chassis department. It was equipped with four large milling machines. There was a through crane track coming from Section No 15 and ending in Section No 47. It had five traveling cranes.

Welded gear boxes delivered by sub-department No 15 were milled at the sides and on top. Two gear boxes were processed simultaneously on each of the milling machines. The boxes were subsequently ground, milled again and then had a finishing treatment on a special milling machine. Work was done in three shifts.

a. Roller conveyor used to transport work pieces from Section No 5 a to Section 5 b of the chassis department.

45. Section 5 b of the chassis department was equipped with one crane and machine tools used for tooling gear boxes and for manual cutting of threads.

46. Section No 6 of the chassis department was divided into two sub-sections. One sub-section was equipped with three milling machines, two drilling machines, and one test stand, as well as one narrow-gauge railway used to transport work pieces to the machines. The other sub-section had three drilling machines used for tooling the bars supporting the gear boxes. The gear boxes came from Welding shop No 16 by means of cranes. Arms supplied to the section in the shape of rails were welded to the gear boxes. Engine and gear were connected by these arms. After the arms had been welded the gear boxes came to the test stand for balancing.

47. Section No 7 of the chassis department is the painting shop. It was equipped with one crane track coming from Section No 15, and one blast engine for cleaning and painting the gear boxes.

a. Test stand.

48. Cold-punching section equipped with several punches, baths and possibly also annealing furnaces. Nuts and plates for the mess hall were punched. Also
25X1 sheet parts for tractors were manufactured here. The significance of these parts was not known [redacted] Furthermore, wire sieves for filters were produced, cases punched and unspecified parts tin-plated and galvanized.

25X1 49. Welding shop. This was partitioned into individual cabins equipped with autogenous welding apparatus for cutting, as well as electric welding
25X1 apparatus for welding. Small parts were processed. [redacted] [redacted]

50. Cold-punching section I equipped with fifteen small punches, three annealing furnaces and ten baths used for punching and processing small parts. Source observed cases and plate-shaped parts being processed. There was a high waste percentage because the presses frequently pressed through the bottom of the pressed parts or did not leave the bottom smooth.

51. Sub-section of Cold-punching section I, equipped with baths for galvanizing, plate shears and one furnace for lead casting. Also plumbing and fitting work was done.

52. Administrative offices of Cold-punching section I were on the first floor. An electrical workshop for repairs was on the second floor.

53. Another sub-section of Cold-punching section I. Driver's cabs and other sheet parts for tractor bodies were produced. Also oil pans were pressed. A large press punched aluminum packings for tractor engine cases. Small plates for tanks were cut from special steel. This material was obviously very valuable, because the waste had to be carefully collected. U-iron cut

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[redacted]

by forming shears served as support for bogey wheels and tracks. Twelve-m steel rails were pressed by a hydraulic press. These rails were used as trucking for the engines. U-iron coming from the forming shears was straightened on a roll which was antiquated and almost unusable. It yielded 30-percent to 50-percent waste products. The rolls were straightened enough to make most of them usable.

a. Two very large cold presses.
b. Two large cold presses.
c. One furnace, oil-fired.
d. One hot press for engine shafts.
e. An office.
f. Two punches.
g. Six small punches.
h. Two large presses.
i. One hydraulic press, German make, built partly underground.
m. Three working areas for manual straightening of plates.
o. A number of stands for the storage of dies.
p. Unidentified.
q. Office on the first floor and a die-shop on the second floor.

54. Preparation section of cold-punching sections I and II for cutting of materials.

i. Three shears.
k. One forming shears.
m. One German-made roll for straightening U-iron.

55. Warehouse for cut-up material for Preparation section No 54.

25X1

56. Raw material warehouse for plates, structural iron, etc. [redacted]
25X1 [redacted] the material originated in Magnitogorsk (53°20'N/ 59°03'E)

a. Two shears.

57. Loading ramp. The ramp was built by lowering the track line below the surface.

58. Spur tracks to the loading ramp.

59. Materials distribution point.

60. Parking space for completed tractors.

61. Material warehouse for upholstered seats, lamps, etc.

62. Material warehouse for oil, paints and cleaning rags.

63. Gate through which completed tanks left for the collecting point.

64. Cold-punching section II. Processing of radiators, pipes and rods for tractors.

a. Two large zinc baths, one wire machine, two small shears, one trolley (running lengthwise) with six cranes.

b. Several medium-sized presses.

c. Polishing machines.

d. Offices.

e. Die-stands.

65. Assembly section.

a. One assembly line for gear boxes and engines.

b. One assembly line for frames.

c. One assembly line under construction. Excavation work and setting up of wheels for the assembly line were under way in late 1949.

66. Spare parts warehouse for chassis, Diesel engines, etc. Parts from this warehouse came to the assembly section and were also dispatched to other plants.

67. Warehouse for small parts.

68. A repair shop, a lathesnop, etc. had been on this site. The installations were dismantled late in 1949. The future use could not be determined.

25X1 69. Engine assembly section. [redacted] Component parts of engines were assembled from single parts supplied by the Diesel engine section. The assembled parts came to assembly line No 65 a.

70. Three test stands for engines.

71. Section TK-10. It was equipped with about 150 machines including saws, automatic lathes, drawing benches, drilling machines, and milling machines for the production of small parts.

72. Annealing shop of Section TK-10. It was equipped with electric furnaces and water baths.

73. Transformer station.

74. Gear section. Source did not know any details of this section.

a. Fountain and park grounds.

75. Chassis and Diesel engine section. No details were available.

76. Section with large annealing furnaces. No further details were available.

Detailed Work Force List.

(Item numbers refer to plant location identified in Annex 1)

Location of workers	First shift	Second shift	Third shift
Transportation section (Item 1)	5 to 10 PWs 5 to 10 Soviets	3 to 5 PWs 3 to 5 Soviets	-
Workshop, (Item 4)	20	15	15
Workshops(Items 6, 7, 9, 11)	..	..	..
Welding shop (Item 15)	25	below 25	below 25
Machine shop (Item 13)	25	25	-
Spring section, (Item 23)	40	30	-
Workshop No 100 (Item 32b)	about 20	..	-
Workshop No 100 (Item 32c)	40	35	30
Workshop No 100 (Item 32d)	20	20	-
Special section (Item 33)	..	..	..
Workshop (Item 34)	..	..	..
Workshop No 200 (Item 41)	about 150	about 150	-
Workshop (Item 42)	about 200	about 200	-
Cleaning shop (Item 43)	4 or 5	4 or 5	-
Chassis department (Item 44)	40	below 40	below 40
Workshop (Item 46)	about 15	about 15	about 15
Workshop (Item 48)	25	25	25
Workshop (Item 50)	50	below 50	below 50
Workshop (Item 53)	15	15	-
Preparation section (Item 54)	10	10	10
Workshop (Item 64)	150 - 200	150 - 200	150 - 200
Engine assembly section (Item 69)	50 - 70	..	..
Workshop TK-10 (Item 71)	200	..	..
Gear section (Item 74)	20	..	..